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10/717,538	11/21/2003	Atsushi Hikita	OHT-0022	7981

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EXAMINER	
MAZUMDAR, SONYA	
ART UNIT	**PAPER NUMBER**
1734	

DATE MAILED: 10/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

C

Office Action Summary	Application No.	Applicant(s)	
	10/717,538	HIKITA, ATSUSHI	
	Examiner	Art Unit	
	Sonya Mazumdar	1734	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 September 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) *12-18* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 November 2003 and 08 May 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see page 7 through 14 of remarks, filed September 28, 2006, have been fully considered but they are not persuasive.

There were no formal arguments against the rejection of claims 1, 8, and 11 under 35 U.S.C. § 112, second paragraph; therefore the rejection is will be maintained.

2. With respect to the rejection of claims 1, 2, 3, 4, 7, 8, 10 and 11 under 35 U.S.C. § 103 as being unpatentable over Hayashizaki in view of Nishi and Takemura et al., a printed layer (4) is supported on image carrying layer (3) containing empty portions as can be seen in Figures 1 and 2. It is not limited by the interpretation of the claim that a second transparent layer (2) must contain pores as well. Also, as stated above, Nishi teaches placing a translucent UV reactive hardening resin on an imaged layer placed on the back of the resin key top. According to *Roget's II: The New Thesaurus* and *Roget's New Millenium Thesaurus*, a synonym for "transparent" is "translucent", and it is known that translucent materials can also be transparent. The definition was retrieved in 2006 from *Roget's New Millenium Thesaurus*, but dates back to the year 1995 as shown in *Roget's* II. As stated above, Takemura et al. teach an output apparatus forming a translucent coloring layer on a transfer sheet by printing with gravure, screen-stencil, and roll coating, and peeling off a transfer sheet. Hence, with the structure of Hayashizaki combined with the transparent resin taught by Nishi and the printing method and peeling step taught by Takemura et al., this combination reads on the limitations of claim 1.

3. With respect to the rejection of claim 5 under 35 U.S.C. § 103(a) as being unpatentable over Hayashizaki in view of Nishi and Takemura et al. as applied to claim 1 and further in view of Fritz et al., no formal argument was made against Fritz et al. because of its dependence on claim 1. However, as stated above and in the teachings of Fritz et al., this combination of references reads on the limitations of claim 5.

4. With respect to the rejection of claim 6 under 35 U.S.C. § 103(a) as being unpatentable over Hayashizaki in view of Nishi and Takemura et al. as applied to claim 1 and further in view of Inagaki et al., no formal argument was made against Inagaki et al. because of its dependence on claim 1. However, as stated above and in the teachings of Inagaki et al., this combination of references reads on the limitations of claim 6.

5. With respect to the rejection of claim 9 under 35 U.S.C. § 103(a) as being unpatentable over Hayashizaki in view of Nishi and Takemura et al. as applied to claim 1 and further in view of Shimuzu et al., no formal argument was made against Shimuzu et al. because of its dependence on claim 1. As stated above and in the teachings of Shimuzu et al., this combination of references reads on the limitations of claim 9. Furthermore, contrary to what is stated on page 8 of the remarks, claims 1-3 and 7-11 were not rejected as being unpatentable over Hayashizaki in view of Nishi and Takemura et al. as applied to claim 1 and further in view of Shimuzu et al. in the Office Action mailed June 29, 2006.

Election/Restrictions

6. Claims 12 through 18 remain withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable

linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on May 8, 2006.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 1, 8, and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1 and 11, the phrase "or the like" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "or the like"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d).

Regarding claim 8, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. Claims 1, 2, 3, 4, 7, 8, 10, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashizaki (US 2002/0063109) in view of Nishi (US 6,451,143) and Takemura et al. (JP 07-164728)

Hayashizaki teaches decorating a molded object made of resin (6) decorated with an underlying colored character or symbol layer (4), having porous areas (B) creating a symbol there between. First, the symbol layer is printed on a transfer sheet (1). Then the symbol layer is then transferred to the resin object and the transfer sheet is removed, forming a design on the resin object. (abstract; paragraphs 0009, 0017, 0026, 0034, 0039; Figures 1a-1g and 2)

Hayashizaki teaches providing a transparent layer (2) acting as a protection film over the colored layer (paragraph 0016; Figures 1a-1g), but does not disclose curing a transparent resin layer. Nishi teaches placing a transparent UV reactive hardening resin with an imaged layer on the back of the resin key top, then irradiating the key top under UV rays (column 3, lines 17-19; column 5, lines 21-28; Figure 2).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to cure a transparent resin to form a transparent resin layer over

the colored layer. One would have been motivated to do so to provide protection for the indicator layer and increase durability for the key top.

Also, Hayashizaki does not teach printing a colored layer on a substrate sheet with an output apparatus that collectively outputs a colored design layer. Takemura et al. teach forming a translucent coloring layer on a base sheet by printing with gravure, screen-stencil, and roll coating. (paragraph 0020)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to print a colored layer on a substrate sheet with an output apparatus that collectively outputs a colored design layer, and one would have been motivated to do so to simplify application of the colored layer without the use of chemicals.

Furthermore, Hayashizaki does not teach peeling the transfer sheet leaving the color design layer onto the resin molded object. Takemura et al. discloses peeling of the base sheet (1) after transfer of the color design layer (2, 31, 32). (Drawing 5)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a transfer sheet capable of being peeled after transfer, and one would have been motivated to do so to remove the transfer sheet without any devices or further methods.

With respect to claim 2, Hayashizaki teaches the image bearing layer being formed of a porous material having a binding phase composed of inorganic particles that are bound by a binder resin. (paragraph 0021)

With respect to claim 3, Hayashizaki teaches a colored layer with longitudinal openings (B) in a direction perpendicular to a plane of the transfer sheet. (Figure 2)

With respect to claim 4, Hayashizaki does not teach curing a transparent resin liquid with an active energy ray after deposition onto the colorant layer. Nishi teaches placing a transparent UV reactive hardening resin with the imaged layer on the back of the resin key top, then irradiating the key top under UV rays (column 3, lines 17-19; column 5, lines 21-28; Figure 2).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to cure a transparent resin liquid with an active energy ray after deposition onto the colorant layer. One would have been motivated to do so to choose a more economical drying process.

With respect to claim 7, Hayashizaki teaches transferring the colored layer (4) onto the back surface of the resin object (6) formed of a transparent resin. (paragraphs 0026 and 0034; Figure 2)

With respect to claim 8, Hayashizaki teaches forming a metallizing layer (3) for complementing a color before transferring the colorant layer onto the resin object. (paragraph 0021; Figures 1a-1g)

With respect to claim 10, Hayashizaki teaches forming an indicator portion to a pushbutton switch. (paragraph 0002)

With respect to claim 11, Hayashizaki teaches decorating a molded object made of resin (6) decorated with a color design character or symbol, having empty symbol portions (B) there between. A colored layer (4) is printed on a transfer sheet (1). The colorant layer is then transferred to the resin object and the transfer sheet is removed, forming a design on the resin object. (abstract; paragraphs 0009, 0017, 0026, 0034, 0039; Figures 1a-1g and 2)

Hayashizaki teaches providing a transparent layer (2) acting as a protection film over the colored layer (paragraph 0016; Figures 1a-1g), but does not disclose curing a transparent resin layer. Nishi teaches placing a transparent UV reactive hardening resin with an imaged layer on the back of the resin key top, then irradiating the key top under UV rays (column 3, lines 17-19; column 5, lines 21-28; Figure 2).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to cure a transparent resin to form a transparent resin layer over the colored layer. One would have been motivated to do so to provide protection for the indicator layer and increase durability for the key top.

Furthermore, Hayashizaki does not teach printing a colored layer on a substrate sheet with an output apparatus that collectively outputs a colored design layer. Takemura et al. teach forming a translucent coloring layer on a base sheet by printing with gravure, screen-stencil, and roll coating. (paragraph 0020)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to print a colored layer on a substrate sheet with an output apparatus that collectively outputs a colored design layer, and one would have been motivated to do so to simplify application of the colored layer without the use of chemicals.

11. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashizaki in view of Nishi and Takemura et al. as applied to claim 4 and further in view of Fritz et al. (US 4,082,635)

Although Nishi teaches placing an UV reactive hardening resin with the imaged layer on the back of the resin key top, then irradiating the key top under UV rays

(column 3, lines 17-19; column 5, lines 21-28; Figure 2), the combined teachings of Hayashizaki, Nishi, and Takemura et al. do not teach leaving the transparent resin for a predetermined time period determined according to a viscosity of the transparent resin liquid. Fritz et al. teaches dependence of curing times on the viscosity of a UV-light curable adhesive composition. (column 1, lines 60-63).

It would obvious to one having ordinary skill in the art at the time the invention was made to have knowledge of the viscosity of the transparent resin and determine a curing time. One would have been motivated to do so for easier processing and producing a cured material that is not brittle.

12. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashizaki in view of Nishi and Takemura et al. as applied to claim 1 and further in view of Ingaki et al. (US 4,937,118)

Although Nishi teaches placing a transparent UV reactive hardening resin with the imaged layer on the back of the resin key top, then irradiating the key top under UV rays (column 3, lines 17-19; column 5, lines 21-28; Figure 2), the combined teachings of Hayashizaki, Nishi, and Takemura et al. do not teach the resin having a certain viscosity or curing it for a certain period of time. Looking at the applicant's definition in the specification, the transparent resin is an active energy ray curing type resin (page 8, paragraph 0019). Ingaki et al. teaches curing an active energy ray-curable compound under UV light for 15 minutes at 2610 cps (2.61 pascal seconds). (column 18, lines 29-31)

It would have been obvious to one having ordinary skill in the art at the time of the invention was made to use a resin having a viscosity limits and curing time limits.

One would have been motivated to do so in the effort to save time and improve production in the manufacture of key tops.

13. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashizaki in view of Nishi and Takemura et al. as applied to claim 1 and further in view of Shimuzu et al. (US 6,196,738)

The teachings of claim 1 are as described above.

Hayashizaki in view of Nishi and Takemura et al. does not teach forming a printed layer by ink jet printing. Shimuzu et al. teach forming an on-demand printed layer by using an ink jet printing technique (column 3, lines 46-53).

It would have been obvious for Hayashizaki in view of Nishi and Takemura et al. to use ink jet printing to form a printed layer and would have been motivated to do so a key top can exhibit increased design properties which are difficult to obtain using conventional screen printing techniques.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the

advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sonya Mazumdar whose telephone number is (571) 272-6019. The examiner can normally be reached on 8AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Fiorilla can be reached on (571) 272-1187. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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